

What is claimed is:

Claim 1. Electrical equipment which comprises:

- a. at least one front-mounting electrical component,  
5            said component having a body with a retaining shoulder at an outside end region and electrical terminals projecting from an inside end region;
- b. an enclosure having sides and a detachable top,  
10            at least one of said sides being formed with at least one cutout for receiving the shoulder of said at least one front-mounting electrical component;
- a. an electrical component retaining plate having a front side and a back side, said plate being formed having at least one cutout for receiving the body of said at least one front-mounting electrical component from the front side of the plate so as to install said at least one electrical component in said plate, said plate being  
15            sized to fit against an inside surface of said at least one of said enclosure sides so that the shoulder of said at least one electrical component installed in the at least one plate cutout is aligned with said at least one wall cutout;
- b. means for attaching said plate to said at least one enclosure side with the front side of the plate against said inside surface of said at least one enclosure side and with the shoulder of said at least one front-mounting electrical component installed in said plate received into said  
20            at least one enclosure side cutout.

Claim 2. The electrical equipment as claimed in  
Claim 1, including electrical connections attached to  
35            said electrical terminals of said at least one of said

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front-mounting electrical component installed in said plate.

Claim 3. The electrical equipment as claimed in  
5 Claim 2, wherein said electrical connections comprise  
electrical wires.

Claim 4. The electrical equipment as claimed in  
Claim 2, wherein said electrical connections comprise a  
10 printed circuit card.

Claim 5. The electrical equipment as claimed in  
Claim 1, wherein said means for attaching the plate to  
said at least one enclosure side detachably attaches the  
15 plate to the at least one enclosure side.

Claim 6. Electrical equipment which comprises:  
a. a front-mounting electrical component, said component having a body with a retaining shoulder at  
20 an outside end region of the body and with electrical terminals projecting from an inside end region of the body;  
b. an enclosure having sides, a selected one of said sides being formed with a cutout for receiving  
25 the shoulder of said front-mounting electrical component;  
c. an electrical component retaining plate having a front side and a back side, said plate being formed having a cutout into which is installed  
30 the body of said front-mounting electrical component from the front side of the plate, said plate being sized to fit against an inside surface of  
said selected enclosure side so that said shoulder of the installed electrical component is  
35 aligned with said enclosure side cutout; and

5                   d. means for detachably attaching said plate to said selected enclosure side with the front side of the plate against said inside surface of said selected enclosure side and with the shoulder of said front-mounting electrical component installed in said plate received into said enclosure side cutout.

10                 Claim 7. The electrical equipment as claimed in  
10                 Claim 6, including electrical connections attached to  
                      said electrical terminals of said front-mounting electrical component installed in said plate.

15                 Claim 8. The electrical equipment as claimed in  
15                 Claim 7, wherein said electrical connections comprise  
                      electrical wires.

20                 Claim 9. The electrical equipment as claimed in  
                      Claim 7, wherein said electrical connections comprise a  
20                 printed circuit card.

Claim 10. A method of assembling electrical equipment in a chassis box using front-mounting electrical components, said method comprising the steps of:

25                 a. providing a front-mounting electrical component having a body and a retaining shoulder at an outside end region of said body and with electrical terminals extending from an inside end region of the body;

30                 b. forming an electrical component retaining plate sized to attach to an inside surface of a selected wall of said chassis box, said plate having a front surface and a back surface and being formed having a cutout sized for receiving the

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body of said front-mounting electrical component;

- c. inserting the body of said front-mounting electrical component into said plate cutout from the front side of the plate so as to install the electrical component in said plate with said electrical terminals projecting from the back surface of the plate;
- d. making a cutout in said selected wall of said chassis box, said wall cutout being sized to receive said electrical component retaining shoulder and being located to match said plate cutout; and
- e. attaching said plate to said selected chassis box selected wall with the front surface of said plate against the inside surface of said selected chassis box wall and with the shoulder of said electrical component installed in said plate extending into said wall cutout.

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Claim 11. The assembly method as claimed in Claim 10, including the step of making electrical connections to said electrical component electrical terminals.

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Claim 12. The assembly method as claimed in Claim 11, wherein the step of making electrical connections to said electrical component electrical terminals includes connecting electrical wires to said electrical terminals and bundling said wires into a wiring harness before said plate is attached to said selected chassis box wall.

Claim 13. The assembly method as claimed in Claim 11, wherein the step of making electrical connections to said electrical component electrical terminals includes

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connecting a printed circuit card to said electrical terminals.

Claim 14. The assembly method as claimed in Claim 5 10, wherein said front-mounting electrical component is selected as an IEC inlet or an IEC outlet.

Claim 15. The assembly method as claimed in Claim 10, wherein the step of attaching the plate to said chassis box wall includes detachably attaching the plate to 15 the selected chassis box wall.

Claim 16. A method of assembling electrical equipment in a chassis box using front-mounting electrical 15 components, said method comprising the steps of:

- a. providing a front-mounting electrical component having a body and a retaining shoulder at an outside end region of said body and with electrical terminals extending from an inside end 20 region of the body;
- b. forming an electrical component receiving plate sized to fit against an inside surface of a selected wall of said chassis box, said plate having a front surface and a back surface and being formed having a cutout sized for receiving the body of said front-mounting electrical component; 25
- c. inserting the body of said front-mounting electrical component into said plate cutout from the front side of said plate so as to install said electrical component in said plate with said electrical terminals projecting from the back side of said plate;
- d. making a cutout in said selected wall of said 30 chassis box, said wall cutout being sized to re-

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ceive said electrical component retaining shoulder and being located to match said plate cutout;

- 5 e. connecting electrical wires to said electrical terminals of said electrical component installed in said plate and bundling said electrical wires into a wiring harness; and
- 10 f. detachably attaching said plate to said selected chassis box selected wall with the front surface of said plate against the inside surface of said selected chassis box wall and with the shoulder of said electrical component installed in said plate extending into said wall cutout and with said wiring harness inside said chassis box.

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Claim 17. A method of assembling electrical equipment in a chassis box using front-mounting electrical components, said method comprising the steps of:

- 20 a. providing a front-mounting electrical component having a body and a retaining shoulder at an outside end region of said body and with electrical terminals extending from an inside end region of the body;
- 25 b. forming an electrical component retaining plate sized to fit against an inside surface of a selected wall of said chassis box, said plate having a front surface and a back surface and being formed having a cutout sized for receiving the body of said front-mounting electrical component;
- 30 c. inserting the body of said front-mounting electrical component into said plate cutout from the front side of said plate so as to install said electrical component in said plate with

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said electrical terminals projecting from the back side of the plate;

- d. making a cutout in said selected wall of said chassis box, said wall cutout being sized to receive said electrical component retaining shoulder and being located to match said plate cutout;
- e. detachably attaching said plate to said selected chassis box selected wall with the front surface of said plate against the inside surface of said selected chassis box wall and with the shoulder of said electrical component installed in said plate extending into said wall cutout; and
- f. connecting a printed circuit card to said electrical terminals of said electrical component installed in said plate.

Claim 18. The assembly method as claimed in Claim 17, wherein the step of connecting a printed circuit card to said electrical terminals of said electrical component installed in said plate is performed before the retaining plate is attached to said selected chassis box wall.

25 Claim 19. Electrical equipment which comprises:

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- a. front-mounting electrical component, said component having a body with a retaining shoulder at an outside end region of the body and with electrical terminals projecting from an inside end region of the body;
- b. an enclosure having sides, a selected one of said sides having a cutout into which is received the body of said front-mounting electrical component with said retaining shoulder outside the enclosure, said electrical component

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being thereby installed in said enclosure side with said electrical terminals projecting inside of said enclosure; and

5 c. a printed circuit card connected to said electrical terminals of said electrical component for making electrical connections to said terminals inside said enclosure.

10 Claim 20. The electrical equipment as claimed in  
Claim 19, wherein said electrical terminals of said electrical component are connected to said printed circuit card by connectors mounted to said printed circuit card.

15 Claim 21. The electrical equipment as claimed in  
Claim 19, wherein said electrical terminals of said electrical component are soldered directly to said printed circuit card.

20 Claim 22. Electrical equipment which comprises:

a. a front-mounting electrical component, said component having a body with a retaining shoulder at an outside end region of the body and with electrical terminals projecting from an inside end region of the body;

25 b. an equipment enclosure having sides, a selected one of said sides having a cutout sized to receive the retaining shoulder of said front-mounting electrical component;

c. a printed circuit card connected to said electrical terminals of said electrical component for making electrical connections to said terminals inside said enclosure; and

30 d. attachment means for detachably attaching said printed circuit card to said selected one of said enclosure sides with the printed circuit card in-

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side said enclosure and with said electrical component shoulder received into said cutout in said selected one of said enclosure sides.

5       Claim 23. The electrical equipment as claimed in Claim 22, wherein said electrical terminals of said electrical component are soldered to said printed circuit card.

10       Claim 24. The electrical equipment as claimed in Claim 22, wherein said printed circuit card is detachably attached to said selected one of said enclosure sides by a plurality of screws and stand-offs.

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